

# ARUBA



Lago Oil & Transport Co., Ltd.

Aruba, Netherlands Antilles

# NEWS

VOL. 44 - NO. 4

May/June 1983

In April, process operators started on a training of the newly purchased 'process simulator'. Two to four process operators have been participating in each 40 hour/one week training. On the photo, trainees Benjamin Curiel and Henry Croes are searching for the cause of a process upset while instructors Joe Yarzagaray of the Process Department and John Slivinsky of ER&E are looking on.



## Simulator assists in training operators

### Preface

The application of computers for process control was introduced at Lago in the late 1960's with the consolidation of multiple field controlhouses into the Refinery Control Center and Oil Movements Control Center. With time, a number of other operations type computer systems were installed in the refinery. At present, major facilities are being replaced, renovated or introduced. The Storehouse has installed a new materials system, the Laboratory has acquired new computers, the new TDC 2000 has just been installed in the Utilities Control Center, some parts of the ROC control system will be replaced and the OMCC facilities will be improved.

To display the role that computing and automation plays in the refinery operations, we have planned a series of articles on that subject to be presented in different issues of the Esso News this year. The following article, the first in the series, deals with the "Process Operator Training Simulator", a recently installed system in the ROC designed to assist in the training of process operators.

A word of thanks goes to Mr. Glen Lungaro, a Refining Engineer in the Technical Department, who has contributed this article to the Esso News. Glen was the Project Leader in charge of the Process Simulator acquisition.

### Process Operator Training Simulator

Starting in the early 1940's, and spanning a period of some 15 years, Lago hired and trained large numbers of national employees in the Lago Vocational School.

(cont. on page 9)

## Simulador ta yuda entrená operador

### Introduccion

E uzo di computer pa control di operacion di planta a wordo introduci na Lago na fin di añanan 60 cu e consolidacion di varios 'controlhouses' den e Refinery Control Center y e Oil Movements Control Center. Cu tempo, varios otro sistema di computer di operacion a wordo instalá den refinaria. Actualmente, facilidadnan grandi ta wordo reemplazá, renobá of introduci. Storehouse a instalá un sistema nobo pa material, Laboratorio a haña computer nobo, e TDC 2000 nobo a wordo instalá recientemente den Utilities Control Center, algun parti di e sistema di control di ROC lo wordo reemplazá y e facilidadnan di OMCC lo wordo mehorá.

Pa muestra e papel cu computacion y automatizacion ta hunga den operacion di refinaria, nos a planea un serie di articulo ariba e topico aki cu lo wordo presentá den diferente edicion di Esso News e aña aki. E siguiente articulo, e promer di e serie, ta tocante e 'Process Operator Training Simulator', un sistema cu recientemente a wordo instalá den ROC y cu ta diseña pa asistí den e entrenamiento di operadornan.

Un palabra di danki ta bai pa Sr. Glen Lungaro, un Refining Engineer den Technical Department kende a contribuí e articulo aki na Esso News. Glen tabata e Project Leader encargá cu e adquisicion di e 'process simulator'.

### Simulador pa entrená 'process operators'

Cumizando den añanan 1940 y durante un periodo di 15 aña, Lago a empleá y entrená un gran cantidad di

(cont. ariba pag. 11)

## Reef islets harbor important tern colonies

For an island that does not enjoy much flora or fauna, it is surprising to learn that the reef islets immediately off the Lago Refinery have harbored the largest and most important tern colonies (locally known as "meeuwchi") of the entire Caribbean area in recent years. According to ornithologists, the welfare of the nesting area off the Lago plant is truly essential for the further reproduction and continued existence of these terns, especially the Cayenne tern which only has a limited distribution worldwide. This nesting area has become even more important as the breeding populations of some species have drastically declined in size in the past 15 years.

Besides the Cayenne tern, other species known to be represented in Aruba are the Roseate-, Common-, Least-, Sooty- and Bridled terns. The Cayenne Tern (*Sterna Sandvicensis Eurygnatha* in Latin) is the most numerous breeding species in Aruba. In good years, almost 3,000 pairs often nest in various subcolonies on several islets. The terns generally arrive in Aruba in mid-April as they did this year. If no serious disturbances occur, they start laying eggs in May. The females lay up to 3 eggs. After about four weeks of

incubation and five weeks of chickfeeding, all the terns and their young leave the area by early August.

Sometimes, however, the entire breed of the bird colony is destroyed by egg poachers who arrive on the island to look for the so-called "booby eggs". These poachers and other disturbers have caused a rather low breeding success of the terns in the past. As the eggs have camouflaging spots and are hidden in shallow nests scooped from the sand, even walking on those islands constitutes a danger to the welfare of the terns.

Although a law protecting these birds was established in Aruba in 1926, 1974 was the first year that law was advertised and enforced. Now, in cooperation with STINAPA-Aruba, the police enforce the prohibition of collection and destruction of the eggs of these birds. When disturbers or "booby-egg" thieves are discovered, Lago Security or the government police should be called. Violators will then be apprehended.

All lovers of nature can cooperate in the conservation of the Caribbean's most important tern colony, by not visiting those reef islets during the terns' nesting season.



*Un meeuwchi chiquito saliendo for di e webo ariba e rif cerca di Seroe Colorado.*

Foto: Renk Ruiter  
Cortesia di STINAPA

## Colonia importante di meeuwchi na rif di Lago

Pa un isla cu no tin hopi flora ni fauna, ta sorprendente pa tende cu e islanan di rif situá directamente dilanti di e refinaria di Lago, den ultimo añanan ta habitá e colonianan di mas grandi y importante di meeuwchi den henter e area Caribense. Segun ornitólogoan, e bienestar di e colonia dilanti di Lago ta verdaderamente esencial pa e reproduccion y existencia di e meeuwchinan aki, especialmente pa e especie Cayenne di cual tin un cantidad limitá mundialmente. E colonia aki a hasta bira mas importante ya cu e cantidad di cierto especienan a baha drasticamente den e último 15 añanan.

Fuera di e especie Cayenne, e otro especienan cu ta conocí di ta na Aruba, ta: Meeuwchi Roseate, -Common, -Least, -Sooty, y -Bridled. E meeuwchi Cayenne (*Sterna Sandvicensis Eurygnatha* na Latin) ta e especie cu mas ta reproducí na Aruba. Durante añanan bon, casi 3000 paar ta traha nan neishi den varios subcolonianan ariba diferente islanan di rif. E meeuwchinan generalmente te jega na Aruba, mescos cu e aña aki, na mitar di April. Si no tin disturbio serio nan ta cuminzá pone webo na luna di Mei. E meeuwchi muher Cayenne ta pone un webo mientras cu e muher di e otro especienan ta pone un maximo di tres webo. Despues di mas o menos 4 siman di incubacion y 5

siman di criamento di e jiunan tur meeuwchi y nan jiunan ta muda for di e area na cuminzamento di Augustus.

Tin biaha, sin embargo, henter e generacion nobo cu mester nace ta wordo destruí pa ladronnan di webo cu ta jega na e islanan pa busca e asina jamá "booby-eggs". Ladronnan y otro perturbadornan den pasado a haci e proceso di reproduccion poco exitoso. Como cu e webonan ta wordo camuflá pa manchanan y ta alavez scondí den neishi no mucho hundo den e santo, hasta canamento ariba e islanan aki ta forma un peliger pa e bienestar di e meeuwchinan.

Aunque cu un ley cu ta proteha e meeuwchinan aki a wordo establecí na Aruba na aña 1926, tabata te na 1974 cu pa promer biaha e ley a wordo publicá y aplicá. Awor en cooperacion cu STINAPA-Aruba, polis ta pone na vigor e prohibicion di colectá y destruí webonan di e paharonan aki. Ora cu perturbadornan y ladronnan di "booby eggs" wordo descubrí, Lago Security of polis di gobierno mester wordo avisá, pa asina e violadornan wordo reprimí. Tur amante di naturaleza por cooperá den conservacion di e colonia di meeuwchi aki di mas importante den Caribe, door di no bishitá e rifnan mientras cu e meeuwchinan tey ainda.



On April 27, Lago secretaries were honored with a luncheon at the Esso Club in celebration of Secretaries Day.

PROMOTION

PABIEN:



Thomas Paddrik  
Section Head-IES  
Technical



To recognize outstanding performance among its officers and at the same time stimulate improvement, the Industrial Security Department has initiated an "Officer of the Quarter" program. Patrolman Gregory Falconi was the first officer to be selected as the "Officer of the Quarter". His name was engraved on a plaque that is now hung in the Industrial Security headquarters. The criteria used for selecting the "Officer of the Quarter" is among others: initiative and drive, quantity as well as quality of performance and maintaining a good departmental image (uniform, posture, attitude, discipline etc.). At the end of the year, the department will select the "Officer of the Year".

NEW FACES . . .



Walter Bosse  
Public Relations



Todd Marut  
Technical

BONBINI!



# Coal to return as energy source

*One objective of the Esso News is to create more understanding of the energy related business environment and the role Exxon plays in such. In conjunction herewith, the following article has been reprinted from Exxon News, an Exxon Corporation publication.*

\* \* \* \* \*

Earlier this century, coal was displaced by petroleum and gas as the industrial world's leading fuel. Now, however, the abundance of coal, its diversity of supply and its price advantage over oil and gas, suggests that this trend will reverse and coal will capture a significant amount of future energy growth.

The United States alone has about 250 billion tons of coal that can be economically mined with today's technology. These reserves represent about one-fourth of the world's known coal reserves and more than twice the energy in the proven oil reserves of the Middle East.

Although petroleum will remain the most important source of energy for many years to come, its growth through 1990 is projected to be only about 1 percent a year. By comparison, free world thermal coal demand during this same period is expected to increase at over 3 percent a year with more than three-quarters burned to generate electricity.

More than 90 percent coal is currently consumed in the countries in which it is mined, but this is likely to change. While the United States is forecast to continue to be self-sufficient in coal and a net exporter, Europe and the Pacific Rim countries will be increasingly dependent upon imported coal. With the demand for thermal coal projected to double by the year 2000, international thermal coal trade will grow rapidly.

One of Exxon's principle objectives is to become a significant producer of thermal coal, both in the United States and in selected other countries. Initially, the company is concentrating on securing a diversified resource base and developing economically attractive reserves, utilizing large-scale, efficient operations, which incorporate high productivity, safety and environmental awareness.

## United States

Exxon's most extensive coal activities to date are centered in the United States, where its recoverable coal reserves total about nine and a half billion tons.

Exxon began acquiring domestic coal reserves in the mid-1960s. Today, Exxon has coal holdings in Wyoming, Montana, North Dakota, Texas, Arkansas, Illinois, Ohio and West Virginia. Last year, total production was 18.6 million tons, up about one-third from 1981. The combined production from Exxon's two large surface mines near Gillette, Wyoming, totaled nearly 14 million tons and two underground mines in Illinois produced almost five million tons of coal. Exxon is also involved in jointly developing another underground mine near Wayne, West Virginia.

## Colombia

The Cerrejón project, which will eventually be among Exxon's largest coal operations, is located in northeastern Colombia at El Cerrejón, on the tip of La Guajira peninsula. An Exxon affiliate is the mine's operator, holding a 50 percent interest in the project in association with a corporation owned by the Colombian government.

The Cerrejón deposits, which will be mined by the open-cut method to a depth of 600 feet, contain over 1.6 billion tons of high-B.T.U., low-ash, low-sulfur coal. Production is scheduled to begin in 1986 and increase to an annual rate of about 15 million metric tons by 1989. Most of the Cerrejón coal will be exported to Europe.

Exxon will provide half of the Cerrejón investment, which in addition to the mine, will include: an airfield; a coal loading port on the Caribbean Sea to handle vessels up to 150,000 deadweight tons; and a 100-mile railroad to haul the coal to the port.

## Europe

Exxon's Dutch affiliate is participating in a joint venture to construct a coal terminal in Rotterdam. The terminal is designed for use in distributing imported

*(cont. on page 8)*



The two boilers are currently being installed at the Powerhouse No. 1 construction of the Utilities Modernization Project. This \$30 million project is proceeding on schedule and is planned to be completed by the end of this year.



*Mimi Garner di Esso Caribbean and Central America (Esso CCA) hunto cu Mark Glanz di Video at a Glanz, tabata na Lago pa algun dia pa filma tur fase di operacion di Refineria. Akinan, Nelo Emerencia di OMS&C Department ta dunando un splicacion di e funcion di Oil Movements Control Center.*

## Carbon ta regresá como fuente di energía

*Un di e obhetivonan di Esso News ta pa crea mas comprendemento di e ambiente di negoshi relacioná cu energía y e funcion di Exxon den tal. En coneccion cu esaki, e siguiente artículo a wordo reproducí di Exxon News, un publicacion di Exxon Corporation.*

\* \* \* \* \*

Den e añanan anterior di e siglo aki, petroleo y gas a reemplazá carbon como e combustible di mas importante den e mundo industrial. Awor, sin embargo, e abundancia di carbon, su diversidad di provision y su prijs cu ta duné ventaha ariba azeta y gas, ta indicá cu e curso aki lo cambia y cu carbon lo capturá un parti importante den aumento di energía.

Estados Unidos so tin alrededor di 250 billion ton di carbon cu por wordo explotá economicamente cu tecnología di awendia. E reservanan aki ta representá mas o menos un-cuarto di e reservanan conocí na mundo y mas cu dos biaha e energía den e reservanan probá di azeta na Medio Oriente.

Aunque cu petroleo lo keda e fuente di energía mas importante pa hopi aña mas, su aumento te aña 1990 ta proyectá pa ta unicamente 1 por ciento pa aña. Pa comparacion, e demanda di mundo liber pa carbon termal durante e mesun periodo ta wordo sperá di aumentá cu mas di 3 por ciento pa aña di cual tres-cuarto lo wordo uzá pa produci electricidad.

Mas cu 90% di tur carbon actualmente ta wordo uzá den e mesun paisnan den cual e ta wordo miná pero probablemente esaki lo cambia. Mientras cu Estados Unidos ta auto-suficiente den carbon y tambe un exportador di e producto ey, e dependencia di Europa y e paisnan di Orilla Pacifico ariba carbon importá lo aumentá. Cu e demanda pa carbon termal proyectá pa ta dobbel na aña 2000, e trafico internacional di carbon termal lo crece liher.

Un di e obhetivonan principal di Exxon ta pa bira un productor significante di carbon termal, tanto na

Estados Unidos como otro paisnan selectá. Pa cuminzá, compania ta concentrando na sigurá un base di recurso-nan diversificá, utilizando operacionnan eficiente y di gran escala, cualnan ta incorporá productividad halto, seguridad y atencion pa ambiente.

### Estados Unidos

E actividadnan mas extensivo di Exxon ariba tereno di carbon te na e dia di awe ta concentrá na Estados Unidos, unda e reservanan di carbon explotable ta monta na un total di nuebe y mei billion ton.

Exxon a cuminzá obtené reservanan domestico di carbon na mitar di añanan 60. Awendia Exxon tin tenen-cianan di carbon na Wyoming, Montana, North Dakota, Texas, Arkansas, Illinois, Ohio y West Virginia. Aña pasá e produccion total tabata 18.6 million ton, un aumento di un-tercera parti di e produccion di 1981. E produccion combiná di Exxon su dos minanan grandi cu ta na superficie cerca di Gillette, Wyoming a suma casi 14 million ton y dos mina subteraneo na Illinois a produci casi 5 million ton di carbon. Exxon tambe ta involví den un desaroyo colectivo di un otro mina subteraneo cerca di Wayne, West Virginia.

### Colombia

E proyecto Cerrejón, cual eventualmente lo ta un di Exxon su operacionnan di carbon mas grandi, ta localizá na parti noreste di Colombia na El Cerrejón, na e punta di e península La Guajira. Un afiliado di Exxon cu un tenencia di 50 por ciento di interés ta operá e mina conhuntamente cu un compania cual ta propiedad di gobierno Colombiano.

E deposito na Cerrejón, cual lo wordo explotá cu e asina jamá "open-cut method" te na 600 pia di profundidad ta contené mas cu 1.6 billion ton di carbon cu B.T.U. halto, poco shinishi y poco azufre. Produccion ta planeá pa cuminzá na 1986 y lo aumentá cu un proporción anual di 15 million ton metrico pa aña na 1989. Mayo-

*(cont. ariba pag. 12)*

## Safety Spot

Technical Department Manager Robert Levy, Operations Support Division Superintendent Raymond Bailey and Supply & Commercial Division Superintendent George Campbell, accompanied by the project's construction manager Luis Anjie, were inspecting the construction activities at the Utilities Modernization Project. Under the newly established "Management Safety Visit Program", different members of management are scheduled to make regular field visits to conduct safety inspection. Although the work-sites initially inspected by management were those with a high level of work activity, they will eventually cover all areas of the refinery.



### MILESTONE

*On May 5th, the Lago Refinery completed one year, or 2.5 million manhours without an on-the-job lost time accident. Congratulations to all employees!*

## Lago adopts new safety policy statement

On March 29, 1983, the Lago Central Safety Committee adopted a new "Statement of Policy Regarding Safety" to be enforced and implemented by Lago Oil & Transport Co., Ltd. Same statement was also adopted by Esso Inter America, Esso Caribbean and Central America Headquarters and other CCA operating affiliates.

### STATEMENT OF POLICY REGARDING SAFETY

It is the policy of Lago Oil & Transport Co., Ltd. to provide its employees with a safe work environment, in full compliance with legal requirements.

In furtherance of this policy, the Company will:

- \* Emphasize safety as a management responsibility at every level of the organization.
- \* Develop and implement safety programs and safety training appropriate to its operations, encouraging employees involvement in this process and commitment to the programs' objectives.
- \* Design facilities and plan operations to minimize hazards to safety, and conduct operations in a responsible manner in the interest of personnel safety and the protection of physical assets.
- \* Continue to identify potential hazards to safety in the workplace, and determine and implement the appropriate means of remedying these hazards.
- \* Communicate with employees concerning their responsibility for working safely to protect themselves and others from injury and to protect physical assets from damage.

# Seguridad



Desde cu e velocidad permiti den Refineria di Lago a ser reduci na inicio di Mei, Industrial Security Department di Lago a aumentá su control di trafico. Lago Central Safety Committee a aprobá e reduccion den velocidad permiti en vista di e percentahe halto di accidente di trafico ariba concesion di Lago. Awor e velocidad permiti pa trafico regular ta 30 km pa ora y pa vehiculo di trabao pisá, 20 km pa ora.

Foto: Jose del R. Nava ta tumando contacto cu un otro agente pa nan check e velocidad di un auto.

## LOGRO

Dia 5 di Mei, Refineria di Lago a completá un anja, of 2.5 ora obreril sin un accidente incapacitante na trabow. Pabien ña tur empleado!

## Poliza nobo di seguridad ta ser adoptá na Lago

Dia 29 di Maart, 1983, Lago Central Safety Committee (Comité Central di Seguridad na Lago) a adoptá un "Declaracion di Poliza Relacioná cu Seguridad" nobo pa wordo poní na vigor y implementá na Lago Oil & Transport Co., Ltd. E mesun declaracion tambe a wordo adoptá pa Esso Inter America, Esso Caribbean and Central America Headquarters y otro afiliadonan operador di CCA.

### Declaracion di Poliza Relacioná cu Seguridad

Ta e poliza di Lago Oil & Transport Co., Ltd., pa su ministrá su empleadonan cu un ambiente di trabow sigur, cumpliendo completamente cu requisitonan legal.

Apoyando e poliza aki Compania lo:

\* Enfatizá seguridad como un responsabilidad di maneho na tur nivel di e organizacion.

\* Desaroyá y implementá programanan y instruccion di seguridad apropiá pa su operacionnan, estimulando envolvimiento di empleadonan den e proceso aki y dedicacion na e obhetivonan di e programa.

\* Diseña facilidadnan y planea operacionnan pa haci peligranon di seguridad menos posible y conducí operacionnan na un manera responsable na interes di seguridad di personal y pa proteccion di equipo y material.

\* Sigi identificá peligranon potencial pa seguridad na e lugar di trabow y determiná y implementá e medionan apropiá pa remediá e peligranon aki.

\* Comunicá cu empleadonan tocante nan responsabilidad pa traha sigur pa asina protehá nan mes y otronan di herida y pa protehá equipo contra daño.



## Volunteer fire fighters complete training in foam fire fighting

In April, the members of Lago's Volunteer Fire Brigade for the first time participated in an advanced course in fighting fires with foam. The training, which was conducted at the Fire Training Center, was also attended by several officers of the Government Fire Brigade.

The program consisted of a total of 24 hours of lecture and field practice and was instructed by Messrs. John Sine and Fred Linde of the National Foam Systems Inc., of Lionville, Pennsylvania. The fire fighters were introduced to the background of foam, its uses, limitations, and its application techniques under fire conditions. The type of foam used is a bubbly substance especially designed to combat Class "B" fires, that is, fire caused by flammable liquids such as kerosine, gasoline, diesel fuel and crude oil. The frothy substance covers and extinguishes fires by excluding air from the burning surface. (Class "A" fires involve wood, cloth, paper, etc. and are extinguished with water or a special type of high expansion foam).

Although this was the first time the Volunteer fire fighters were given a training in advanced "foam" fire fighting, Messrs. Chin Harms and Wim Brinkman of Lago's Industrial Security Department had attended that same course a few years back at Texas A&M University. The National Foam School, a subdivision of National Foam Systems, conducts this course annually at that University where over 100 individuals attend from all over the world, especially from the oil industry.

With this additional training, Lago's Volunteer fire fighters will be better equipped to secure the Refinery against hazardous fires.



Above: The Volunteer fire fighters are practicing foam fire fighting during their three-day training. The foam is hardly visible here as water is used on both sides of the foam operator to protect him from the heat.



Above and beside: Fred Linde and John Sine of National Foam are checking the pump capacity of a fire truck.



### The Coal come-back . . . (cont. from pag. 4)

coals, including Cerrejón coal, to Dutch and other European customers. This investment is supportive of the Netherlands' efforts to lessen its dependence on oil and to conserve domestic natural gas supplies for more productive purposes.

#### Canada

An affiliate of Imperial Oil Limited - a Canadian company in which Exxon has a 70 percent interest - owns Byron Creek Collieries which operates Coal Mountain - literally a mountain of coal thrusting well above ground level in southeastern British Columbia. Plans are currently being developed to double the mine's production from the present one million metric tons of coal a year.

In addition to this operating mine, the affiliate has extensive undeveloped coal holdings in western Canada.

#### Australia

In New South Wales, Exxon has a 49 percent interest in the Gloucester coal project which has reserves suitable

for mining three million metric tons a year. The company is funding a \$ 2 million exploration program at Gloucester to find additional reserves outside the known mineable areas.

Exxon also has a 25 percent in the Hail Creek coal project in Queensland and is conducting an exploration program in the State of Victoria.

\* \* \* \* \*

Exxon is determined to carry out its coal activities in a sound and responsible manner. In addition to miner safety, the company is committed to safeguarding the physical environment, to protecting and restoring affected areas and to working with local communities to help mitigate the social and economic impacts of its activities.

Exxon's worldwide coal profits are modest, but growing: \$ 25 million (estimated) in 1982 up from \$ 13 million in 1981. The company believes demand for coal will continue to grow through the rest of the century. Thus, coal is viewed as an attractive, growing business for Exxon.



## Process simulator . . . *(cont. from pag. 1)*

With the first wave of graduates approaching retirement age, Lago has been hiring more and more younger workers, resulting in a steadily declining average experience level.



"The actual simulation occurs in this simulator computer right here," said Glen Lungaro.

Recognizing this trend, Lago Management several years ago embarked on a program to prepare for the influx of new personnel. A major part of this program is the increased emphasis placed on all forms of training. The Process Department, directly affected by this rising burden of training, searched for more efficient alternatives to the traditional and time-consuming methods of class room sessions followed by a prolonged period of apprenticeship.

The most promising alternative proved to be a process simulator, which is a system designed to assist in the training of process operators.

### Process Simulator

This process simulator, driven by computer-based models, attempts to duplicate the operator interface portion of a real process using authentic instrumentation.

The programmed models in the computer generate instrument signals that are very similar to those of a real process unit (e.g. furnace, or a light-ends tower). The trainee sits before a standard console and reacts to the signals by making changes (set point adjustments, pump starts and stops, etc.) and by observing the results in the form of altered levels, temperatures, flow rates, and pressures. The effect is much the same as that of an aircraft pilot sitting in a flight simulator.

### Benefits

An obvious advantage of the simulator is the reduced training time for operators and new engineers. Other benefits are increased efficiency and better response to unit upsets, which in turn provide for safer operations. In addition the trainee will be exposed to real situations in a simulated form and thereby develop confidence in handling similar operating conditions on an operating unit.

### Efficiency

A simulator allows the trainee to directly practice and exercise the skills learned from conventional methods. It follows that a simulator not only reduces the training period, but enhances the quality of that training. The new operators' increased effectiveness allows a closer approach to targets and constraints.

It is often not clear to the new operator exactly how, for example, furnace efficiency depends on interactions among blower pressure, draft pressure, stack damper, burner configuration, and duty. A simulator-trained operator benefits from practice on an ideal furnace, with predictable responses. He directly observes the results of his manipulations, and more thoroughly understands how and why real furnaces deviate from the ideal.

### Unit Upsets

The record shows that most unit upsets are caused by equipment failure and feed contamination. Because it duplicates the response of a live process, the simulator provides a practical way to learn through practice how to deal with and recover from process upsets. The operator who has experienced many upsets will recognize the symptoms earlier and take quicker action to dampen the effects.

Because of common methods and ease of cross-training, a simulator-trained operator team is more likely to prevent upsets from seriously affecting downstream units.

The number of minor upsets resulting in product downgrades, slop production, or reduced feed rates should consequently be reduced.

### Conclusion

The simulator, while making the teaching process more effective, does not take the learning process any easier. It does not eliminate the need for classroom or on-the-job training. However, it does provide a teaching process which allows the process operator to reach the desired level of functional effectiveness in a much shorter time.



Recently, Lago again conducted a career orientation program for this graduating class of Colegio Arubano students.

## ALERT celebrates fifth anniversary

Last month, the Lago Emergency Rescue Team — ALERT — celebrated its fifth anniversary with an award presentation to its 11 members. "The rescue team has demonstrated its value during the past five years by responding to some real life emergencies," said Bernard Kalis, captain of the team. To keep team members prepared for life saving operations, they yearly receive intensive training in first aid techniques, fire fighting, light and heavy rescue operation and the SCBA. They also conduct full day training sessions once a month in the refinery where real life emergency situations are simulated. The rescue team uses specialized rescue equipment, including rigging equipment to rescue from high structures, and a rescue equipment truck to transport victims if an ambulance is not available. ALERT members would also assist fire fighters during a fire emergency if rescue assistance is not required.

Aruba Esso News Editor: Mrs. M. Jansen-Feliciano  
Photographs by: Joe's Photography Service  
Printer: Verenigde Antilliaanse Drukkerijen N.V.

Due to production difficulties, the May and June issues of the Esso News have been combined into one 12-page issue.



ALERT members from left to right: A. M. Mirjah; J. E. Ruiz; M. A. Polland; B. A. Kalis (captain); W. A. Cannegieter; P. de Souza. Missing are: G. W. E. Dirkz (lieutenant); F. F. Croes; H. W. Peters; C. Kwidama and E. Dowling.



*Un regalo di reconocimiento a ser duná na Jacobo Maduro y Emilio de Cuba, kendenan a completá 15 año como miembro di e Brigada Voluntario di Lago. Di robex pa drechi, Jacobo; Bill Crenshaw, Industrial Security Administrator; Emilio; y Chin Harms, Fire Chief.*

## Bomberos voluntario a sigi curso avanzá

Na April, e miembronan di e Brigada di Bomberos Voluntario di Lago pa promer biaha a participa den un curso avanzá den pagamento di candela cu 'foam'. E entrenamiento, cual a ser tení na e Fire Training Center, tambe tabatin participacion di varios oficial di e Cuerpo di Bomberos di gobierno.

E programa a consistí di un total di 24 ora di lectura y practica y a wordo instruí pa Srs. John Sine y Fred Linde di National Foam Systems Inc., di Lionville, Pennsylvania, E.U. E bomberonan a haña informacion tocante e historia di 'foam', su uzonan, limitacionnan y e modonan di aplicacion durante candela. E tipo di 'foam' cu ta ser uzá ta un substancia espumante especialmente diseñá pa combatí candelanan di Clase "B", esta candela causá pa liquidonan cu ta kima, manera kerosin, gasolin, azeta di diesel y azeta crudo. E substancia yen di scuma ta tapa y paga candela door di corta oxígeno for di e superficie cu ta kimando. (Can-

delanan di Clase "A" ta envolvé palo, paña, papel, etc. y por wordo pagá cu awa of un tipo especial di 'foam' di expansion halto).

Aunque cu esaki tabata e promer biaha cu e bomberonan voluntario a haña un entrenamiento avanzá den pagamento di candela cu 'foam', Srs. Chin Harms y Wim Brinkman di Industrial Security Department di Lago a atendé e mesun curso un poco aña pasá na Texas A&M University. E National Foam School, un subdivision di National Foam Systems, ta conducí e curso aki tur aña na e universidad ei, unda mas cu 100 hende di tur parti di mundo ta atendé, especialmente di e industria petrolero.

Cu e entrenamiento adicional aki, e Brigada di Bomberos Voluntario di Lago lo ta mihor equipa pa sigurá e refinaria contra candelanan peligroso.



13 operador di diferente division di Process Department a participá den e Process Training Program recientemente. E programa a consistí di 3 siman y mei di instruccion den klas y algun siman di entrenamiento den planta. Instruccion a ser duná pa personal di departamentonan Technical, Process, y Mechanical. Safety Section tambe a duna instruccion cu e ayudo di modulonan STIP (Skills Training Improvement Program). Fotonan ariba: Oslin Boekhoudt di Technical ta dunando informacion ariba e topico "Temperature and Heat".



## Simulador . . .

(cont. di pag. 1)

empleadonan local na Lago Vocational School. Cu e promer oplanan di graduadonan jegando e edad di pension, Lago a empleá mas y mas trahador hoben, resultando den un declinacion constante di e nivel di experiencia.

Mirando e tendencia aki, gerencia di Lago varios aña pasá a embarcá ariba un programa pa prepará pa e influho di empleadonan nobo. Un parti principal di e programa aki ta e enfasis creciente cu ta ser poní ariba tur forma di entrenamiento. Process Department, directamente afectá pa e carga di entrenamiento a busca alternativanan mas eficiente pa e metodonan tradicional di enseñanza den klas sigí pa un periodo prolongá di práctica.

E alternativa mas prometedor a keda comprobá di ta e 'process simulator', cual ta un sistema diseñá pa asistí na e entrenamiento di operadornan.

### 'Process Simulator'

E 'process simulator', estimulá pa modelonan di computer, ta intentá di duplicá e parti cu ta toca e operador den un proceso real uzando instrumentonan autentico.

E modelonan programá den e computer ta generá señalnan di instrumentonan cu ta casi igual na esunnan cu ta wordo uzá den e proceso verdadero (por ehemplo, e forno of e 'light ends tower'). E practicante ta sinta dilanti un consola tipico y ta reaccioná ariba e señalnan, haciendo cambionan ('point adjustments', 'pump starts', y 'pump stops') y observando e resultadonan den forma di nivelnan alterá, temperatura, 'flow rates', y presion. E efecto ta mescos cu esun di un piloto di avion sintá den un simulador di vuelo.

### Beneficio

Un beneficio obvio di e simulador ta cu e ta reducí e duracion di entrenamiento di operador y ingenieronan nobo. Otro ventahanan ta e aumento di eficiencia y un mihor reaccion ariba trastornonan di e planta, cual na su turno ta resultá den operacion cu menos peligro. Adicionalmente e practicante lo wordo confrontá cu e situacion autentico na forma simulá y cu esei ta desaroyá confianza den trata cu situacionnan similar di operacion ariba planta.

## Eficiencia

E simulador ta permití e estudiante pa prácticá directamente y ehercé su abilidadnan cual ela siña pa metodonan convencional. Ta resultá cu e simulador no solamente ta reducí e duracion di entrenamiento, pero tambe ta mehorá e calidad di dje. E aumento den eficiencia di e operadornan nobo ta permití un mihor acercamiento di e meta y restriccionnan.

Hopi biaha no ta comprensible pa e operador nobo ta exactamente con, por ehemplo, e eficiencia di un forno ta dependé ariba e interaccionnan entre 'blower pressure', 'draft pressure', 'stack damper', 'burner configuration' y 'duty'.

Un operador entrená pa e simulador ta beneficiá di e práctica ariba un forno perfecto cu respuestanan pronosticá. E ta observá di biaha e resultadonan di su manipulacionnan y ta comprondé mihor con y pakiko un forno real ta desviá di un forno ideal.

### Fayonan di Unidad

Record ta muestra cu e fayonan di majoria di unidad ta wordo causá pa fayó di equipo y contaminacion. Como cu e ta duplicá e respuesta di un proceso real e simulador ta ofrecé un manera practico pa siña door di prácticá ta con ta manehá y recuperá di un fayó di unidad. E operador cu a experienciá hopi fayó lo reconocé e simptonanan mas tempran y lo por actua mas liher pa reducí e efectonan. Pa motibo di metodonan comun y e facilidad di 'cross training', un team di operador entrená pa e simulador lo ta mas capable di prevení un fayó di afectá e otro unidadnan 'downstream' seriamente.

E cantidad di fayonan chiquito cu ta resultá den producto di menos calidad, produccion cu dramamento, of reduccion di e 'feed rate' consecuentemente mester wordo reducí.

### Conclusion

Mientras cu e simulador ta haci e proceso di entrenamiento mas efectivo e no ta haci e proceso di siñamento mas facil. E no ta eliminá e necesidad pa entrenamiento den klas of na trabao. Sin embargo e ta ofrece un proceso di entrenamiento cu ta permití e operadornan di yega na e nivel di eficiencia funcional deseá, den un tempo mas corto.





*Na Mei, e Torneo di Softball Interdepartamental di Lago a ser iniciá cu un wega entre Mechanical Tractors y Mechanical Manitowoc na Lone Palm Stadium. Ariba fotonan por wak algun di e teamnan cu ta participando den e torneo.*



*Foto abao: Den e torneo di futbol entre teamnan di Lago y Gobierno, e team di OM&S aki a sali subcampeon. POVA a sali campeon di e torneo.*



**Regreso di carbon . . .** (cont. di pag. 5)

ria parti di e carbon di Cerrejón lo wordo exportá pa Europa.

Exxon lo suministrá mitar di e inversion den Cerrejón, cu fuera di e mina tambe lo inclui: un pista di aterrizaje pa avion; un waf pa carga carbon, situá na laman di Caribe, cu mester por trata barco di peso ta cu 150.000 ton; y un trein cu lo hiba e carbon pa e waf.

**Europa**

Exxon su afiliado Hulandes ta participando den un empresa conhunto pa construí un terminal pa carbon na Rotterdam. E terminal ta diseñá pa distribuí carbon importá, incluyendo carbon di Cerrejón, pa clientenan Hulandes y otro clientenan Europeo. E inversion aki ta un apoyo pa e esfuerzonan di Hulanda pa reduci nan dependencia ariba petroleo y pa conservá e reservanan di gas natural pa obhetivonan mas productivo.

**Canada**

Un afiliado di Imperial Oil Limited - un compania Canades den cual Exxon tin un interes di 70% - ta doño di Byron Creek Collieries kende ta manehá Coal Mountain - literalmente un montaña di carbon cu ta sali ariba tera den parti sureste di British Columbia. Plan ta wordo desaroyá pa doblar e produccion di 1 million ton metrico di carbon pa aña.

Fuera di e mina aki, e afiliado ta doño di tenenarian grandi di carbon no-explotá den parti oeste di Canada.

**Australia**

Na New South Wales Exxon tin 49% di interes den un proyecto di carbon na Gloucester, cual proyecto tin reservanan cu lo por produci 3 million ton metrico pa aña. E compania ta subsidiá un programa pa exploracion di 2 million dollar na Gloucester pa asina busca reservanan adicional pafor di e area conteniendo carbon.

Exxon tambe tin 25% di interes den e proyecto di carbon na Hail Greek, Queensland y ta conduciendo un programa di exploracion den e estado Victoria.

\* \* \* \* \*

Exxon ta determiná pa ehecutá su actividadnan ariba tereno di carbon na un manera sano y responsable. Fuera di seguridad den explotacion di minanan, compania ta determiná pa cuida e ambiente fisico, protehá y restorá areanan afectá y trahá cu comunidadnan local pa juda aliviá e impacto social y economico di su actividadnan.

Exxon su ganashi mundialmente riba tereno di carbon ta modesto, pero creciendo: 25 million dollar na 1982, mientras cu e tabata 13 million dollar na 1981. E compania ta kere cu e demanda pa carbon lo sigi aumentá pa resto di siglo. Pesei carbon ta wordo mirá como un negoshi atractivo y creciente pa Exxon.